



February 13, 2024

William B. Bode
Garage Mahal LLC
18900 W. Bluemound Rd., Suite 212
Brookfield, WI 53045
Via Electronic Mail Only to brayton1953@gmail.com

Subject: Review of Site Investigation Work Plan
Garage Mahal LLC Property
W164 N88595 Mills St, Menomonee Falls, WI
BRRTS #: 02-68-593061, FID #: 268707120

Dear Mr. Bode:

On December 19, 2023, the Wisconsin Department of Natural Resources (DNR) received the "Site Investigation Work Plan" (Report) prepared for Garage Mahal, LLC by Himalayan Consultants, LLC. The Report was submitted with a fee for DNR review and response. The DNR reviewed the Report for consistency with Wis. Admin. Code §§ NR 716.07 and 716.09 and has determined that the code requirements have generally been met with the incorporation of additional comments provided by the DNR in this response letter.

Report Summary

Himalayan Consultants, LLC, on your behalf, has proposed the following recommendations for continued investigation activities on the property. The Report proposes several more soil borings offsite, to the south and to the east of the subject property and the need for further assessment of vapor intrusion for the adjacent properties and utilities. The soil borings will be converted into groundwater monitoring wells if sufficient groundwater is encountered.

DNR Review of the Report

All environmental media affected or potentially affected by the contamination must be evaluated (Wis. Admin. Code § NR 716.07(4)). The DNR recommends additional sampling in addition to the proposed sampling in the Report. Following the DNR's review of the Report, the DNR generally concurs with the recommendations presented in the Report, while incorporating the following comments:

Soil

- Himalayan Consultants has proposed five additional soil borings. Two are proposed on the adjacent property (Lime Kiln Apartment Homes- W164 N8845 Mill Street) to the southeast of the Site (as shown in Figure 2: Boring/Well Location Map) and three soil borings are proposed in the Lime Kiln parking lot, to the east/southeast of the Site (as shown in Figure 2: Boring/Well Location Map).
 - Additional soil sampling is needed to delineate the degree and extent of contamination to the southwest of soil sample B-9. Consider advancing an additional soil boring in the alleyway, southwest of soil boring B-9, to delineate the degree and extent of soil contamination.

Groundwater

- Consider installing a bedrock NR 141-compliant groundwater monitoring well in the source area to determine the vertical degree and extent of groundwater contamination on-site. For this Site, it is important to understand how bedrock fracturing and preferential pathways relate to contaminant migration.

Vapor

- The first round of data has been received for the sub-slab vapor sample collected in the parking garage to the north. Collection of an additional sub-slab vapor sample in the parking garage to confirm sample results is warranted. Collect this sample during the cooling season since the first sample was collected during the heating season.

- In addition to the proposed sub-slab and indoor air sampling for the apartment building to the south (Lime Kiln Apartment Homes) consider the following: the number of sub-slab sample locations should be determined by either the square footage of the building or the number of residences on the lowest level of the building. See Table 5c (attached) in DNR document *Addressing Vapor Intrusion at Remediation and Redevelopment Sites in Wisconsin* (RR-800).
- Collect sanitary sewer vapor samples to determine if the utilities are acting as a migration pathway. Reference DNR document *Guidance for Documenting the Investigation of Human-made Preferential Pathways Including Utility Corridors* (RR-649) for guidance on investigating preferential pathways for vapor intrusion.
- Discuss the storm sewer as a potential migration pathway in future submittals.

Other DNR Comments

- Site investigation activities are an iterative process and additional work may need to be conducted after additional findings are presented for the Site.
- Off-site property owners must be notified of sampling results within 10 days in compliance with Wis. Admin. Code § 716.14(2).
- Provide a figure with the sub-slab vapor sample location that was taken in the parking garage to the north in the next submittal.

Schedule

The submitted Report does include a schedule for conducting the field investigation and reporting the results, per Wis. Admin. Code § NR 716.09(2)(h). Furthermore, the DNR is requesting implementation of the following schedule:

- Results of the site investigation activities must be submitted to the DNR in a comprehensive Site Investigation Report (SIR) that meets the requirements in Wis. Admin. Code § NR 716.15. The SIR shall be submitted to the DNR within 60 days after completion of the field investigation and receipt of laboratory data. The DNR suggests that the SIR be submitted with a fee for review and response.
- NR 700 semi-annual progress reports will be required until the case is closed.

The DNR appreciates the efforts you are taking to address the contamination at this Site. If you have any questions about this letter, please contact me, the DNR Project Manager, at (414) 208-7412 or Zachary.Henderson@wisconsin.gov.

Sincerely,








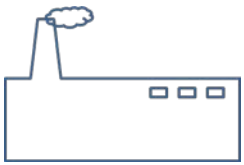
Zach Henderson
Project Manager – Hydrogeologist
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources

cc: Thomas Dueppen - Himalayan Consultants, LLC- Via Electronic Mail

Attachments:

- *Addressing Vapor Intrusion at Remediation and Redevelopment Sites in Wisconsin*- DNR document [RR-800 \(pg. 30\)](#)
- *Guidance for Documenting the Investigation of Human-Made Preferential Pathways Including Utility Corridors*- DNR document [RR-649](#)

**TABLE 5c
GUIDELINES & RECOMMENDATIONS FOR SCOPING VAPOR INVESTIGATIONS**

SCOPE ITEM	SETTING						
	 RESIDENTIAL	 RESIDENTIAL MULTI-FAMILY	 LARGE RESIDENTIAL (e.g. SCHOOL or DAYCARE)	 MIXED USE	 COMMERCIAL	 INDUSTRIAL	
SUB-SLAB SAMPLES ^{(a) (b)}	~1/1,500 sf	~1/ 2,000 sf or 1/residence on lowest level	Fewer samples/sf than residential homes. Number of samples will depend on site conditions: – Focus samples near areas where highest vapor contamination is expected. – Depending on results, additional samples may be needed over an expanded area to delineate extent of vapor impacts. – Barriers (e.g. footings or old exterior walls) should be factored into the selection of sample locations. – Fewer sample points are needed for high purge volume sampling as compared to standard sub-slab vapor sampling.				
INDOOR AIR RECOMMENDED? ^(c)	Yes			Depends on sub-slab results (Not recommended if contaminants of concern are in use at the business.)			
SAMPLING FREQUENCY ^(d)	3 times		2 – 3 times		1 time (high purge volume sampling) ^(e) 2 – 3 times (standard sampling)		
TIME OF YEAR	At least one sample in winter and one sample in another season. (Times during decreasing temperature change may be best time to sample).				Winter preferred for at least one sample. (No restrictions for high purge volume sampling)		
ATTENUATION FACTOR DEFAULT	0.03 1 (crawl space)		0.03		0.03 (small bldgs.) ^(f) 0.01 (large bldgs.) ^(f) 0.01		
ATTENUATION FACTOR SITE-SPECIFIC ^(g)	Not Allowed		Possible – Depending on size and condition of building			Allowed	
HVAC CONSIDERATIONS	Sample with windows closed, and under normal HVAC operations.		Sample under normal HVAC and building operations, and document operating conditions. If building has distinct HVAC sectors, evaluate if sampling is needed to evaluate unique sectors.				
OTHER SPECIAL CONSIDERATIONS	If building contains a sump that may have contaminated water, collect water sample and/or vapor sample from sump to evaluate this as a vapor pathway.						
	Utilities can be primary entry point for vapors. Evaluate if soil gas or other unique sampling is needed to assess the utility as a vapor pathway.						
	--	Elevators or vertical utilities can move vapors to higher levels. Indoor air samples from multiple units, rooms, and/or levels may be needed.			If contaminant of concern is still in use , indoor vapors can migrate to the subsurface or the indoor air of neighbors.		
	--	Lower level parking garages may mitigate vapor intrusion into overlying occupied spaces, but this must be confirmed through testing. Sub-slab samples are still needed to complete the site investigation.			A building's HVAC and/or foundation condition may mitigate vapor intrusion, but sub-slab samples are still needed to complete the site investigation.		

- Notes**
- (a) Soil gas samples can be collected along utility corridors or adjacent to buildings where conditions preclude sub-slab vapor sampling.
 - (b) Crawl space air sample can be used in place of sub-slab samples for buildings with crawl space. No attenuation is applied to results from crawl space samples.
 - (c) Background ambient air samples should be collected whenever indoor air is sampled.
 - (d) If fewer sample events are used to rule out the vapor pathway, a technical explanation should be provided to the DNR for approval.
 - (e) High purge volume sampling requires large building footprint to accommodate ~ 25-ft radius of influence for the vacuum. Sampling only once requires QA/QC documentation.
 - (f) Use best judgment to select small or large commercial building, and provide technical rationale for the default attenuation factor selected for a building.
 - (g) Site-specific attenuation factors are calculated using empirical data from the site (e.g. a radon tracer test).